

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
17 May 2001 (17.05.2001)

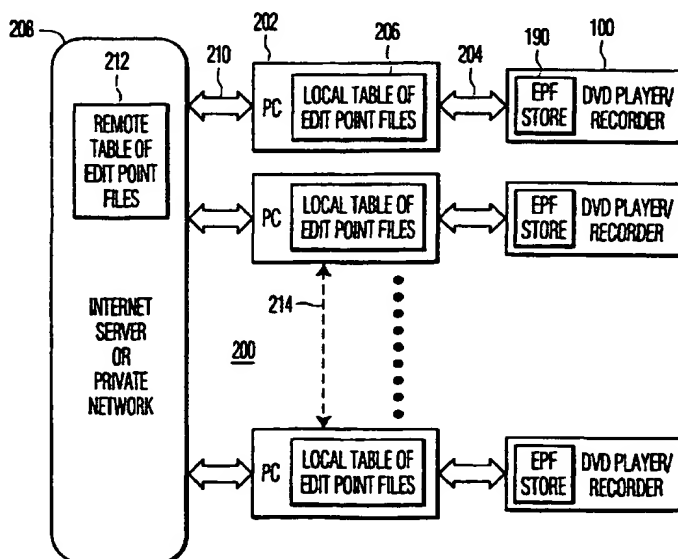
PCT

(10) International Publication Number  
**WO 01/35410 A1**

- (51) International Patent Classification<sup>7</sup>: **G11B 27/00**, 27/10, 19/02, 27/11, G06F 17/30, H04N 7/16
- (21) International Application Number: **PCT/US00/30725**
- (22) International Filing Date:  
10 November 2000 (10.11.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/164,793 10 November 1999 (10.11.1999) US  
60/204,304 15 May 2000 (15.05.2000) US
- (71) Applicant (for all designated States except US): **THOMSON LICENSING S.A.** [FR/FR]; 46, quai Alphonse Le Gallo, F-92648 Boulogne Cedex (FR).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **FITZPATRICK, John, James** [US/US]; 3903 Junco Circle, Indianapolis, IN 46228 (US).
- (74) Agents: **TRIPOLI, Joseph, S. et al.**; Thomson Multimedia Licensing Inc., P.O. Box 5312, Princeton, NJ 08540 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:  
— With international search report.

[Continued on next page]

(54) Title: **EDITING AND SHARING SYSTEM FOR REWRITABLE DISK MEDIA**



(57) Abstract: A system and a method for presenting a program included in digital video data in accordance with edit information associated with the program. The edit information is stored in a publicly accessible storage medium, such as a server connected to the internet, or a medium coupled to a private network including a digital home network. The edit information, comprising edit point files, can be created and edited by various entities including individual consumers or ratings groups, and uploaded to the publicly accessible storage medium or the medium coupled to a private network, and then downloaded as desired. Such an arrangement allows a user to share edit information with others connected to the network as well as view programs in accordance with previously created edit information.

BEST AVAILABLE COPY

WO 01/35410 A1



— Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## EDITING AND SHARING SYSTEM FOR REWRITABLE DISK MEDIA

The inventive arrangements relate generally to methods and apparatus creating and sharing edit points files used to  
5 customize video and/or audio digital programs recorded on disk media, for example recordable digital video disks, hard drives and magneto optical disks.

Various devices have been developed to enable consumers to record video and/or audio programs for later presentation.

10 Such devices include tape recorders, video cassette recorders, recordable compact disks, and most recently, recordable digital video disks (DVD). Hard drives and magneto optical disks have also been used.

As of this time no uniform industry standard has been  
15 adopted for recordable DVDs. The acronyms DVD-RAM, DVD-RW and DVD+RW are also used generally to refer to the respective rewritable technologies. Reference herein to rewritable DVD technology, devices and methods is generally intended to encompass all of the standards which are now being used, as  
20 well as those which may be developed in the future.

Depending upon the standard that is eventually adopted, if any, certain recording schemes used to implement various advanced features will be compatible with all devices adhering to the standard, whereas other recording schemes may prove to  
25 be incompatible due to inconsistencies with the standard. Nevertheless, a particular proprietary advanced feature incompatible with other devices can still be very desirable from a consumer's point of view. The result is merely that a recording made in accordance with an incompatible advanced  
30 feature cannot be played back on the device of a different manufacturer, even if conventional recordings are fully compatible and portable.

In many cases, the program presentations are recorded in the viewer and/or listener's absence, for presentation at a  
35 later, more convenient time. This is referred to as time shifting the program. At other times, a program is being viewed and/or listened to without being recorded, and without any interest in a recording, but the viewer's and/or listener's

attention is interrupted, for example by a telephone call or an unexpected visitor. If the viewer and/or listener is watching a television program, for example, and has a cassette tape in a VCR, or can retrieve and load such a cassette tape quickly, the program can be recorded. However, the viewer and/or listener cannot view and/or listen to the program in its entirety, and in a proper time sequence, until after the recording has been completed. The time to completion of the recording can be short or long, depending on the length of the program.

Although rewritable DVD technology is generally available, operation is limited to such basic functions as play, record, fast forward reverse and stop. Pause is available, but only as a counterpart to pause operation in a VCR, for example interrupting the play back of a prerecorded program or interrupting the recording of a viewed program to eliminate commercials from the recording. Unlike computer hard drives, recordable DVD devices have a very significant additional function, which is playing back prerecorded DVD's. Thus, there is an economic incentive to develop rewritable DVD technology, including methods and devices, that can be used instead of a computer hard drive. It is a challenge to provide such devices with improved, advantageous features without compromising the goal of decreasing costs and increasing sales.

Rewritable DVD technology typically uses MPEG-2 encoders and decoders and many acronyms are encountered that are related to MPEG-2. The DVD standard, for example, calls for the video content of the disk to be divided up into video object units (VOBU's) in which each VOBUs contains 0.4 to 1.0 seconds of presentation material. Each VOBUs starts off with a navigation pack (NV\_PCK or NAV\_PACK). The navigation pack contains various navigation information, some of which is very useful for trick modes. The navigation pack includes presentation control information (PCI) and data search information (DSI). One example is the inclusion of the start addresses for many of the nearby VOBUs. This can facilitate jumping to the next VOBUs forward or backward, or for a faster trick mode, to the second VOBUs forward or backward, or to the third, etc. Another example is the inclusion of the end address for the first three

reference pictures in the VOB. This is the only clue given as to the structure of the VOB.

Each video object set (VOBS) includes a plurality of video objects. Each video object includes a plurality of cells.

- 5 Each cell includes a plurality of VOB's. Each of the VOB's contains about 0.4 to 1.0 seconds of presentation material. A typical VOB in a commercial movie contains 0.5 second of presentation material, corresponding to one group of pictures (GOP). Each VOB is a sequence of packs in recording order.
- 10 Each VOB starts with exactly one navigation pack and encompasses all of following kinds of packs, including a video pack (V\_PCK), an audio pack (A\_PCK) and a sub-picture pack (SP\_PCK).

- Data search information (DSI) helps the decoder find
- 15 reference pictures within the VOB corresponding to the current Nav\_Pack. DSI also helps the decoder to find VOB's far into the future or past, relative to the current VOB. The VOB's in the past relative to the current VOB presentation are referenced in fields of the Nav\_Pack known as the BWDI
- 20 (backward information). The VOB's in the future relative to the current VOB presentation are referenced in fields of the Nav\_Pack known as FWDI (forward information). One example is the inclusion of the start addresses for many of the nearby VOB's, up to +240 VOB forward and -240 VOB backward
- 25 directions. This can facilitate jumping to the next VOB forward or backward, or for a faster trick mode, to the second VOB forward or backward, or to the third, etc.

- The video, audio, subpicture, presentation control information and data search information are the five kinds of
- 30 packetized elementary streams (PES).

- The various features and characteristics described above make it possible for programs to be recorded, re-recorded or simply played back in an edited form. It is known, for example, that movies on DVD disks can be manufactured such
- 35 that, as played back, the viewer can select different levels of violence, sexual content and profanity. It is possible, and indeed desirable, that viewers can edit such programs according to their own likes and desires, even when desired criteria do

not correspond to the preprogrammed choices. Moreover, it is desirable that viewers can share their personally edited versions with others having similar tastes or concerns. Simply providing copies of edited programs can raises copyright  
5 concerns. There is a need to provide a method for sharing such personally edited programs that is easy to implement and does not raise legal concerns.

In accordance with the inventive arrangements, the problems described above are overcome by methods and apparatus  
10 for creating and sharing the personal editing control files, hereinafter referred to as edit points files, making it unnecessary to share the actual programs. Advantageously, edit points files can be transferred between viewers, for example over the Internet, by modem to modem connections, or in the  
15 context of a private network including a digital home network. An Internet server, for example, can be advantageously used as a central storage location to which personal edit points files can be uploaded from viewers and from which the personal edit points files can be downloaded by other viewers.

20 Figure 1 is a block diagram of a rewritable DVD device that can be provided with one or more advance operating features in accordance with the inventive arrangements.

Figure 2 is a diagram useful for illustrating a system for creating, editing, storing and sharing edit points files in  
25 accordance with the inventive arrangements.

Figure 3 illustrates a typical Table of edit points files in accordance with the inventive arrangements.

Figure 4 is a flow chart illustrating the steps for creating, editing edit points files and providing a customized  
30 program sequence in accordance with the inventive arrangements.

Device 100 for implementing the various advanced operating features in accordance with the inventive arrangements taught herein utilizes rewritable disk medium 102 in accordance with the inventive arrangements is shown in block diagram form in  
35 Figure 1. Rewritable disk medium 102 is embodied as a rewritable DVD in the illustrated embodiment. In many instances, as will be noted, the rewritable disk medium can also be, for example, a hard drive or a magneto optical disk

(MOD). An example of a MOD is a minidisk. In many instances, the inventive arrangements are applicable to video or audio or both video and audio.

Device 100 is capable of writing onto and reading from the disk medium, in this example, a rewritable DVD 102. Device 100 comprises mechanical assembly 104, control section 120, video/audio input processing path 140 and video/audio output processing path 170. The allocation of most of the blocks to different sections or paths is self-evident, whereas the allocation of some of the blocks is made for purposes of convenience and is not critical to understanding the operation of the device.

Mechanical assembly 104 comprises motor 106 for spinning DVD 102 and pickup assembly 108 that is adapted to be moved over the spinning disk. A laser on pickup assembly 108 burns spots onto a spiral track on the disk or illuminates spots already burned onto the track for recording and playing back video and/or audio program material. For purposes of understanding the invention, it is irrelevant whether the disk is recordable on one or two sides, or in the event of a double-sided recording, whether the double-sided recording, or subsequent reading from the disk, takes place from the same side of the disk or from both sides. The pickup and the motor are controlled by servo 110. Servo 110 also receives the Playback Signal of data read from the spiral track of disk 102 as a first input. The Playback Signal is also an input to error correction circuit 130, which can be considered part of the control section or part of the video/audio output processing path.

Control section 120 comprises control central processing unit (CPU) 122 and navigation data generation circuit 126. Control CPU 122 supplies a first input signal to navigation data generation circuit 126 and servo 110 supplies a second input signal to navigation data generation circuit 126. The servo can also be considered part of the control section. Navigation data generation circuit 126 supplies a first input signal to multiplexer (MUX) 154, which forms part of video/audio input processing path 140. The output of MUX 154

6

is an input to error correction coding circuit 128. The output of error correction coding circuit 128 is a recordable input signal supplied to pickup 108, which will be "burned" onto the spiral track of disk 102 by the laser.

5       Control buffer 132 for viewer activatable functions indicates those functions presently available, namely play, record, reverse, fast forward, pause/play and stop. The pause is a counterpart to pause operation in a VCR, for example manually interrupting the play back of a prerecorded program or  
10       interrupting the recording of a viewed program to eliminate commercials from the recording. A separate buffer 136 is provided to receive commands for implementing the creation, uploading and downloading of an edit points files (EPF). Buffers 132 and 136 can be combined.

15       Video/audio input processing path 140 is a signal processing circuit for converting a conventional television signal, for example NTSC or PAL, into digitized packet data, for example MPEG-1 or MPEG-2, for digital recording by device 100. Input path 140 comprises NTSC decoder 142 and video  
20       encoder, for example MPEG-1 or MPEG-2, 144 for video in, and comprises audio analog-to-digital converter (A/D) 146 and audio encoder, for example MPEG-1 or MPEG-2, 148. The digitized signals are combined in multiplexer 150 and stored in record buffer 152 until an entire packet has been constructed. As  
25       each packet is constructed, each packet is combined with the output of the navigation data generation circuit in MUX 154 and sent to error correction coding circuit 128. Error correction coding circuit 128 can also be deemed to be part of input path 140.

30       As a practical matter, the smallest addressable unit on the spiral track of a DVD is an ECC (error correction code) block of 16 sectors, where each sector includes 2048 bytes of user data. A group is an integer number of ECC blocks, for example 12. Each group of blocks represents approximately 0.5  
35       seconds of combined video and audio program material. The amount of linear space along the spiral track needed to record a group of ECC blocks, for example 192 sectors, is defined herein as a segment of the spiral track. One segment of data



7

can correspond, for example, to approximately 0.5 seconds of audio and video program material.

Output processing path 170 comprises track buffer, or output buffer, 172, in which data read from the disk is assembled into packets for further processing. The packets are processed by conditional access circuit 174 that controls propagation of the packets through demultiplexer 176 and into respective paths for video and audio processing.

The video is decoded by decoder 178, for example from MPEG-1 or MPEG-2, and encoded as a conventional television signal, for example NTSC or PAL. The audio is decoded by circuit 182, for example from MPEG-1 or MPEG-2, and converted to analog form by audio digital-to-analog (D/A) converter 184. Output processing path 170 can be deemed to include error correction circuit 130, as noted.

Each nearly circular, radially concentric section of the spiral is sometimes referred to as a track, but this terminology is not commonly accepted as having that specific meaning. In CD-ROM's, for example, the term track is also used to refer to that portion of the spiral track that contains a single audio song, or other selection, and the same may or may not become common for DVD's.

It will be appreciated that the advanced features taught herein are applicable to other kinds of disk media and disk media players and recorders.

In the present invention, DVD movies and digital audio data can be seamlessly cut, pasted and displayed in a form determined by user preference using edit point files. The edit point files control device 100 to, for example, turn on/off video, audio and subpictures, and jump to various points in the program sequence. Furthermore, the edit information can be stored in remote computers, storage devices and DVD players and transferred to a particular DVD player through digital communication.

Fig. 2 illustrates system 200 for creating and sharing edit point files for customizing playback of video/audio programs stored on disk 102. System 200 includes a plurality of devices 100 coupled to respective PCs 202, which are in turn

coupled to remote device 208. The devices may be coupled to each other using any one of a plurality of communication interfaces known to those skilled in the art, including, but not limited to firewire, RS232, USB, or IRDa.

5        PCs 202 perform various control and interfacing functions between devices 100 and remote device 208 including, requesting, storing, displaying, processing, and transferring the edit point files. The local table of edit points stored in PC 202 is illustrated in Fig. 3, wherein the table identifies  
10 each stored program, comprising a particular edit point file, and its corresponding address location. PCs 202 may also be used to generate and edit the edit point files. Although the present embodiment includes separate PCs 202, it is to be  
15 understood that the functions performed by PCs 202 may be incorporated into devices 100 by including the necessary communications and processing elements into devices 100.

Remote device 208 comprises any one of a plurality of devices or systems that can be coupled to device 100 via digital communication and used to receive, store and transfer  
20 edit point files therebetween. In the present embodiment, remote device 208 comprises a server coupled to PCs 202 via the internet, whereby the edit point files can be made publicly accessible and easily transferable between remote device 208 and devices 100. Remote device 208 may also comprise a server  
25 connected via a private network, including a digital home network.

The edit point files are stored in memory 190 of each device 100 and are used to customize the playback of programs on disk 102 according to user preference. A user may create an  
30 edit point file by providing edit point queues at the desired points of the program. Edit selections can be made using a remote control device having editing keys, such as video/audio/subpicture edit keys, included thereon, or using an OSD menu provided by device 100. An edit summary with  
35 thumbnail sketches of edit entry points may be displayed on a television display. Device 100 receives edit point queues from player controls and/or remote and generates an edit point file in response in accordance with software stored therein.

## 9

The table below outlines a sample edit point data format for generating the customized playback sequence.

	Material Index	Type of Edit	Address
5	I1	T1	A1
	I2	T2	A2
	I3	T3	A3
	I4	T4	A4

The type of edit refers to the nature of the edit, for example, a video edit start, which may correspond to a blank screen or a freeze, a video edit stop, an audio edit start, or an audio edit stop. The material index corresponds to the reference point in the material where the edit begins or ends. Such a reference point could be a time reference to material play, i.e., title:hours:minutes:seconds:fraction of seconds, or MPEG header numbers, or any other means of referencing the sequence of visual and/or audio material. The address corresponds to the location in memory where these array points are stored.

Control CPU 122 executes a create edit point file routine stored in memory 134 to generate the desired edit point file. The edits may be stored in link lists in the memory and associated to the title of the movie. The edit point files are stored in a non-volatile storage media and indexed to the program title so a user will have the option of using the previously stored edit point files during subsequent playback of the program. When a user places a disc in a device 100, device 100 reads the title and asks whether the user would like to use an existing edit point file. As the movie or audio disc is playing the user can update or enter new edit points into device 100. Advantageously, Windows CE may be introduced into device 100 such that these edit capabilities can be integrated into a Windows application. This application will use standard desktop video editing techniques to achieve the edited product. At all times this editing is carried out through the DIVX and CSS decryption so that the content is never in the clear.

Additionally, the edit point files may be locked with a password so that the edit point files will be automatically used, or not used, during subsequent playback of the program. Once the edit point file is in place and the user has made the

## 10

appropriate selections, the presentation of the program will occur omitting the video, audio, and/or subpictures as specified by the edit point files. Edit points in the edit point files can be removed individually or globally.

5       The edit points can be transferred from one device 100 to another using various communication interfaces, including fire wire, RS232, USB, IRda or modems. These communication  
10 interfaces can also be used to connect device 100 to PCs 202, as well as remote device 208, that will streamline the editing process and the saving and downloading of edit points. As  
15 shown in Fig. 2, a remote table of edit point files may be kept on remote device 208 on the internet. When the user is interested, he can download the desired edit point files to his home PC 202 and then, via RS232 or some other prearranged  
20 communications protocol, to device 100. Similarly, the user may create and upload an edit point file from device 100 to remote device 208, via PC 202. In this regard, control CPU 122 executes a download/upload EPF routine stored in memory 134 in response to a download/upload request from the user.

25       In the present embodiment, the editing information necessary to generate a customized playback is transferred to and stored in a memory device of device 100. Once the editing information has been transferred, device 100 monitors the playback status and generates the necessary editing commands to  
30 seamlessly provide a customized playback sequence without further commands from home PC 202 or remote device 208.

      In an alternative embodiment, the editing information may be transferred to home PC 202, wherein home PC 202 monitors the playback status and sends the required commands, during  
35 appropriate moments of the playback, to provide the customized playback. In such a case, home PC 202 keeps track of real time via the RS232 port and when PC 202 notes that an edit point is coming up, PC 202 sends a command to attached device 100 to perform the required editing step, such as seamlessly jumping to the next edit point. Again, the functions of PC 202 may be  
40 incorporated into device 100, such that the real time monitoring of playback and issuance of editing commands may be performed directly between device 100 and remote device 208.

It can be seen that by using the present invention, new edit files may be devised and made publicly accessible by a many different entities, including, individual consumers, an organization that previews and provides the edits as a service, a bulletin board participant, or an employee of a web-based service.

Fig. 4 is a flowchart illustrating the control of device 100 in creating an edit point file and playing back a program in accordance with an edit point file. In step 306, device 100 determines whether the user has selected a play mode or an edit mode. If in the edit mode, device 100 reads the time of the program playback sequence in step 308. In step 310, device 100 reads the edit status to determine whether the user has selected an edit command, such as by pressing a video/audio/subpicture edit key or changing the edit mode. In step 312, if the user has selected a mode change, method 300 returns to step 306. If the user has not selected an edit point or a mode change, method 300 goes to step 316 to wait for a 200ms timer to elapse, and then returns to step 308. If the user has selected an edit point, method 300 goes to step 314 and stores the information associated with the edit point into the edit point file. The edit information includes: the edit status, i.e., audio start/stop, video start/stop, subpicture start/stop, and audio and video start/stop; track; hour; minute; and second. Once the edit information is stored, method 300 waits for the 200 ms timer to elapse and continues by returning to step 308.

If the play mode is selected in step 304, method 300 goes to step 318, wherein the array pointer is set to a first edit point entry. In step 320, device 100 reads the current playback information including title, hour, minute and second. In step 322, device 100 compares the current playback information with the first edit point entry. If the current playback information is not past the first array pointer entry, method 300 determines in step 324 whether the current playback information is past the pointer entry that immediately precedes the first array pointer entry. If not, the array pointer is decremented by one in step 328, and method 300 returns to step

12

322. If so, method 300 goes to step 346 without making any changes to the array pointer.

5 If the current playback information is past the first array pointer entry as determined in step 322, method 300 goes to step 330 to determine whether the current playback information is past the pointer entry immediately following the first array pointer entry. If not, method 300 increments the array pointer by one in step 326 and returns to step 322. If so, method 300 checks the edit type specified in step 332, and  
10 then performs the particular one of the edit steps 334, 336, and 338 as required. If an end edit command is specified, method 300 determines the current edits that should be ended. Here, method 300 turns off the mute, resumes the video, or resumes the subpictures as required in step 342.

15 At this point, method 300 decrements the array pointer by one in step 344 and waits for the 200 ms timer to elapse in step 346. In step 348, device 100 checks the edit status to determine whether the user has requested a change in the operating mode. In step 350, method 300 goes to step 306 if  
20 the user has selected the edit mode. If the play mode is maintained, method 300 reads the current playback information in step 320 and repeats the steps for turning on/off the edits as described above.

It will be apparent to those skilled in the art that  
25 although the present invention has been described in terms of an exemplary embodiment, modifications and changes may be made to the disclosed embodiment without departing from the essence of the invention. For example, the edit file may be created, and shared to remove commercials in recordable devices.  
30 Therefore, it is to be understood that the present invention is intended to cover all modifications as would fall within the true scope and spirit of the present invention.

## CLAIMS

1. A method for presenting digital video data,  
5 comprising the steps of:

receiving digital video data from a first data storage  
medium; and

displaying a program included in the digital video data in  
accordance with editing information associated with the

10 program, characterized by

requesting and receiving, from a publicly accessible  
storage medium, edit information associated with the program,  
and

15 processing the digital video data in accordance with the  
edit information to thereby display an edited program sequence.

2. The method according to claim 1, further  
characterized by the step of

20 storing the edit information in a second data storage  
medium that is coupled to a means for processing the digital  
video data.

3. The method according to claim 2, characterized in  
that the storing step comprises storing the edit information in  
25 a non-volatile storage medium, and further characterized by the  
step of

determining whether a user selected program has associated  
edit information stored in the non-volatile storage medium, and  
if so, automatically processing the user selected program in  
30 accordance with the associated edit information stored on the  
non-volatile storage medium.

4. The method according to claim 3, further  
characterized by the step of

35 allowing the user to override the automatic processing by  
entering a password.

14

5. The method according to claim 4, further characterized by the steps of

displaying the associated edit information in a user viewable form, and

5 allowing the user to select portions of the associated edit information to be used during playback of the digital video data.

6. The method according to claim 2, further characterized by the steps of

10 transmitting playback position information to the publicly accessible storage medium as the digital video data is being processed, and

15 receiving and storing edit information transmitted by the publicly accessible storage medium in response to the transmitted playback position information.

7. The method according to claim 1, further characterized by the steps of

20 displaying a plurality of edit information sets associated with the program and available from the publicly accessible storage medium, and

requesting a user selected ones of the plurality of edit information sets from the publicly accessible storage medium.

25

8. The method according to claim 1, further characterized by the steps of

displaying the edit information in a user viewable form, and allowing the user to select portions of the edit

30 information to be used during processing of the digital video data.

9. The method according to claim 1, further characterized by the steps of

35 receiving user entered edit information, and

transmitting the user entered edit information to the publicly accessible storage medium.



## 15

10. The method according to claim 1, characterized in that the publicly accessible storage medium comprises a server connected to the internet.

5 11. The method according to claim 1, characterized in that the edit information includes one of blank video command, audio mute command, blank subpicture command, and jump in time command.

10 12. The method according to claim 1, characterized in that the step of receiving the edit information comprises receiving the edit information via one of firewire, RS232, USB and IRda.

15 13. A method for presenting digital video data stored on a first data storage medium that is coupled to a private network, including a digital home network, comprising the steps of:

20 receiving digital video data from the first data storage medium; and

displaying a program included in the digital video data in accordance with editing information associated with the program, characterized by

25 requesting, from a second storage medium that is also coupled to the private network, edit information associated with the digital video data;

receiving and storing the edit information in a third storage medium; and

30 processing the digital video data in accordance with the edit information stored in the third storage medium to provide a program output.

14. The method according to claim 13, further characterized by the steps of

displaying a plurality of edit information available from  
5 the second storage medium,

receiving a user selection of one of the plurality of edit information, and

requesting the user selection from the second storage medium.

10 15. The method according to claim 13, further characterized by the steps of

displaying the edit information in a user viewable form,  
and allowing the user to select portions of the edit  
15 information to be used during processing of the digital video data.

16. The method according to claim 13, characterized in that the receiving and storing step comprises storing the edit  
20 information in a non-volatile storage medium, and further characterized by the step of:

determining whether a user selected digital video data has associated edit information stored in the non-volatile storage medium, and if so, automatically processing the user selected  
25 digital video data in accordance with the associated edit information stored on the non-volatile storage medium.

17. The method according to claim 13, further characterized by the steps of

30 receiving user entered edit information, and  
transmitting the user entered edit information to the second storage medium.

18. The method according to claim 13, further  
characterized by the steps of transmitting playback position  
information to the second storage medium as the digital video  
5 data is being processed, and receiving and storing edit  
information transmitted by the second storage medium in  
response to the transmitted playback position information.

19. The method according to claim 13, characterized in  
10 that the step of receiving the edit information comprises  
receiving the edit information via one of firewire, RS232, USB  
and IRda.

20. A method for managing at a publicly accessible site  
15 editorial information related to digital video and/or audio  
programs, comprising the steps of:

receiving a user transmitted file request; and  
transmitting the requested file, characterized by  
receiving from at least one remote site an edit points  
20 file containing editorial information related to any digital  
video and/or audio program edited at the at least one remote  
site;  
storing the edit points file at the publicly accessible  
site;  
25 enabling remote access to the stored indexed edit points  
file from any other remote site; and,  
transmitting the edit points file to the any other remote  
site responsive to a request from the remote sites.

21. The method of claim 20, further characterized by the steps of:

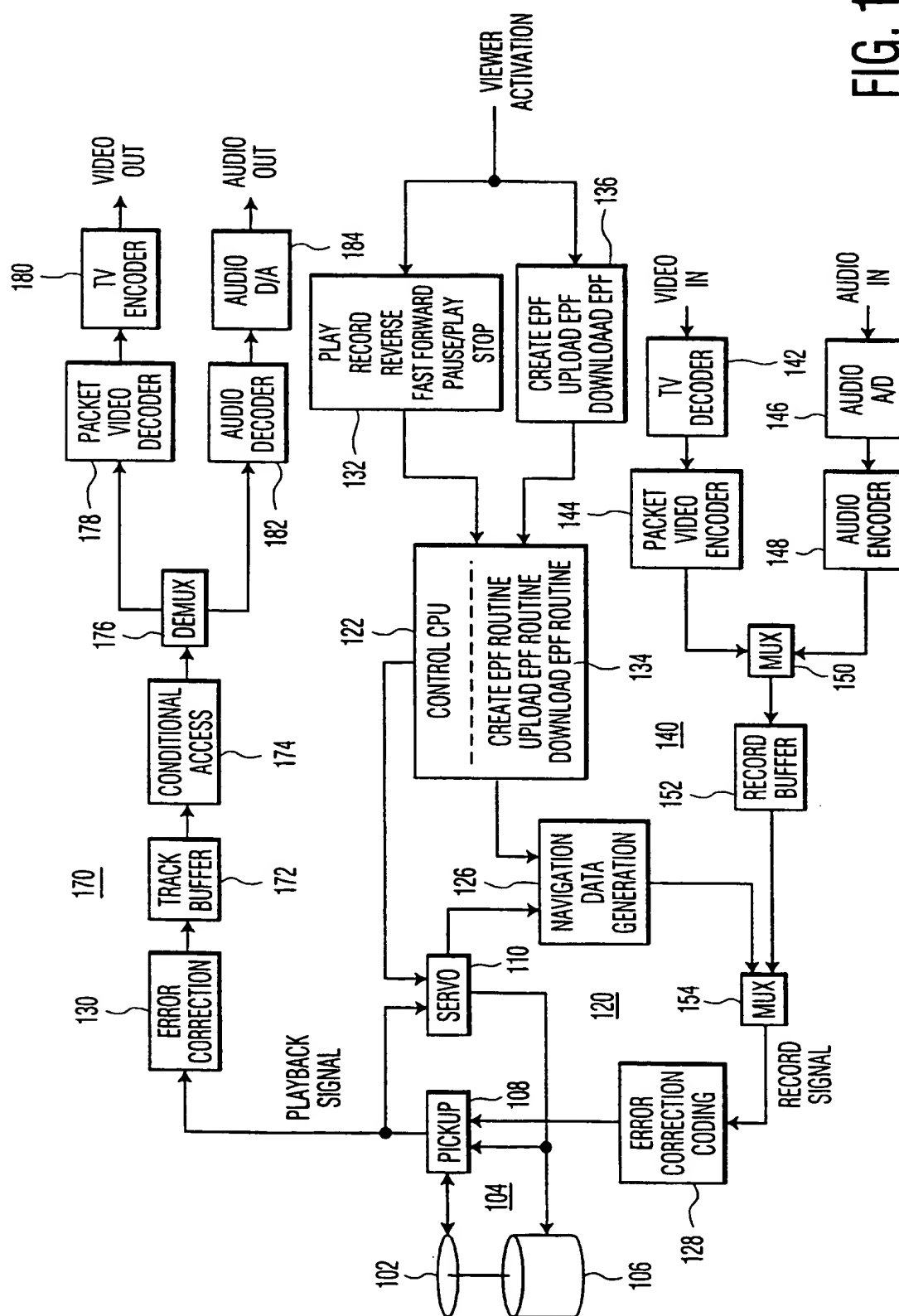
receiving a plurality of said edit points files from a  
5 plurality of the remote sites;  
storing all of the edit points files;  
indexing the stored edit points files;  
enabling remote access to all of the stored indexed edit  
points files; and,  
10 transmitting requested ones of the edit points files to  
different ones of the remote sites.

22. The method of claim 21, further characterized by the step of

15 storing for each of the edit points files a corresponding  
program title and editing strategy.

23. The method of claim 22, further characterized by the step of

20 managing the publicly accessible site from an internet  
server.



**FIG. 1**

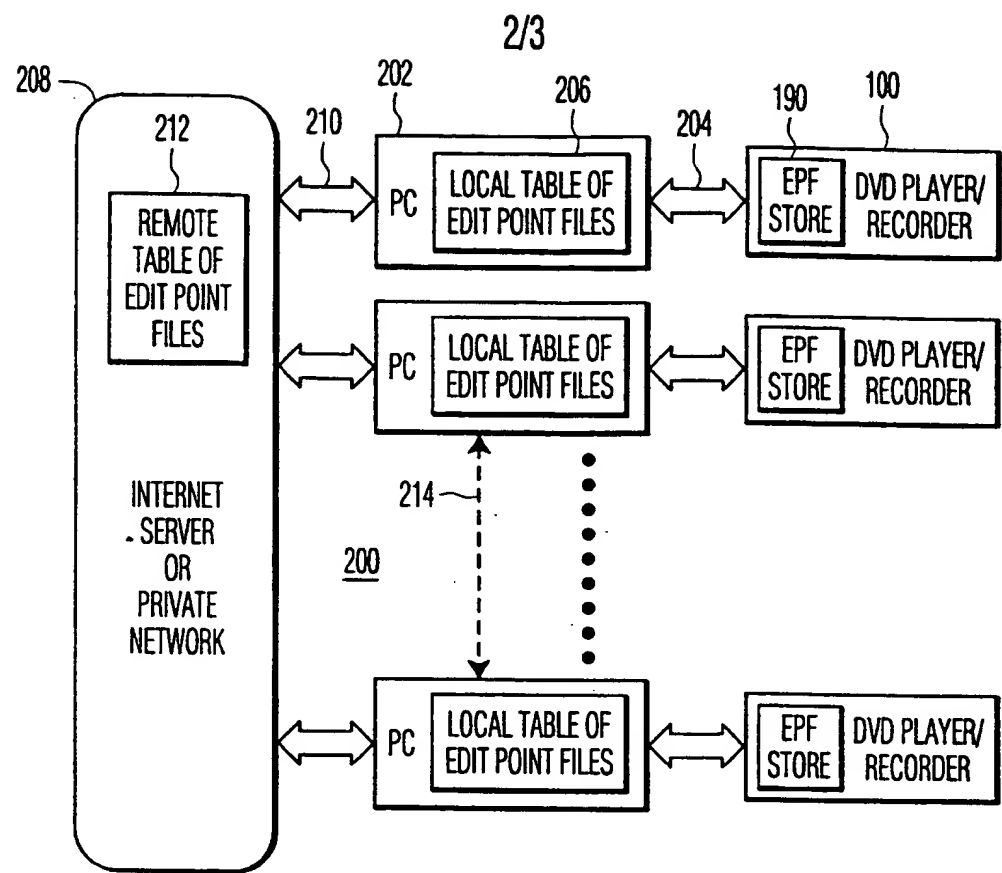


FIG. 2

TABLE OF EDIT POINT FILES

206, 212

PROGRAM	ADDRESS
P1	A1
P2	A2
P3	A3
P4	A4
P5	A5
•	•
•	•
•	•
•	•

FIG. 3

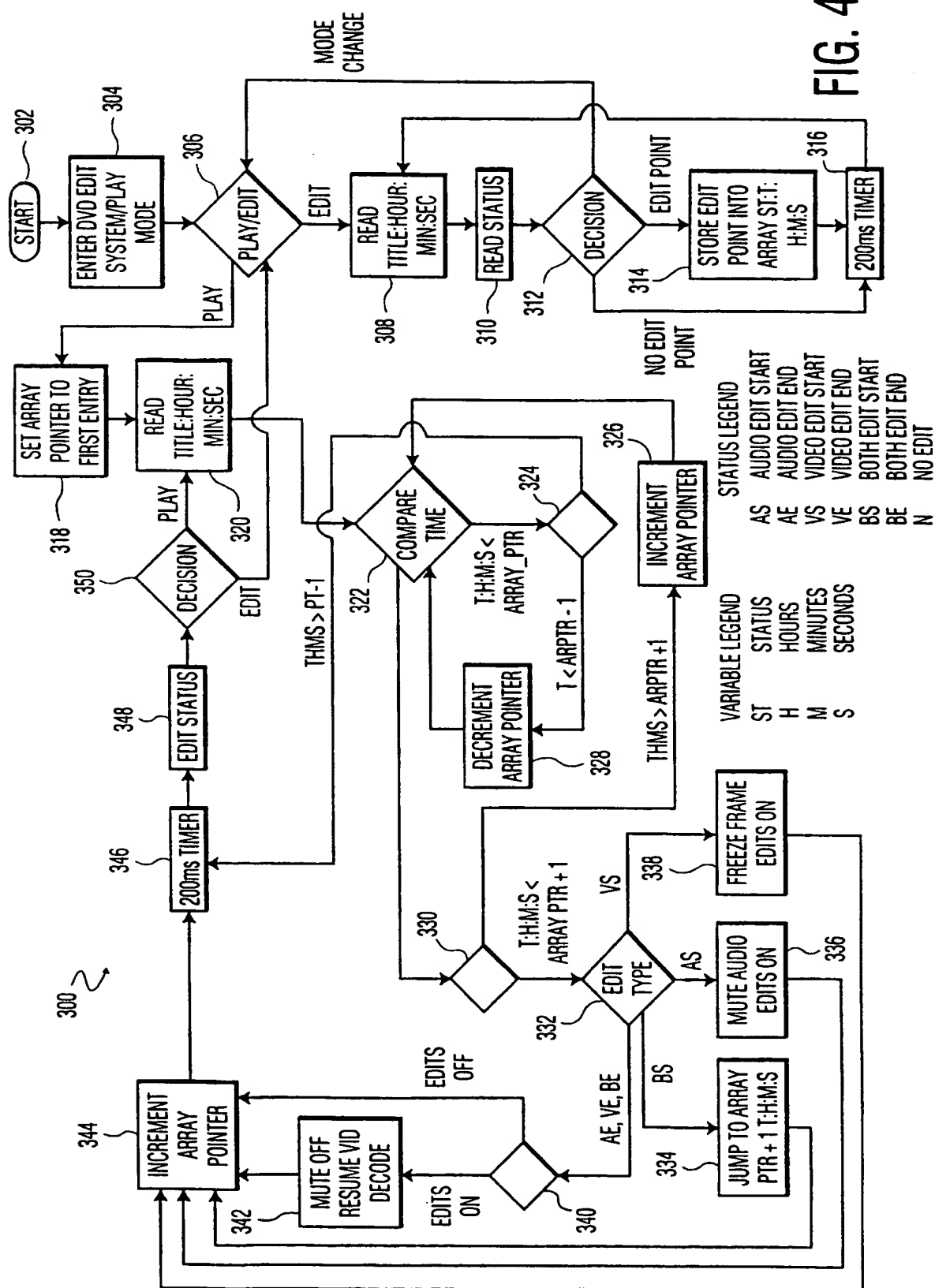


FIG. 4

# INTERNATIONAL SEARCH REPORT

Int. lional Application No  
PCT/US 00/30725

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 G11B27/00 G11B27/10 G11B19/02 G11B27/11 G06F17/30 H04N7/16		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 G11B H04N H04H G06F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 910 088 A (COMPAQ COMPUTER CORP) 21 April 1999 (1999-04-21)  the whole document	1-10, 13-18, 20-23
X	EP 0 450 841 A (GTE LABORATORIES INC) 9 October 1991 (1991-10-09) column 4, line 11 - line 16	1-3,6,9
Y		4,5,7,8, 10
A		13, 16-18,20
Y	WO 98 25269 A (THOMSON CONSUMER ELECTRONICS) 11 June 1998 (1998-06-11) the whole document	10
A		1-9, 11-20
-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search  27 February 2001		Date of mailing of the international search report  06/03/2001
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  Daalmans, F



# INTERNATIONAL SEARCH REPORT

Int. l. Application No

PCT/US 00/30725

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,Y	WO 00 05715 A (THOMSON CONSUMER ELECTRONICS, INC.) 3 February 2000 (2000-02-03) abstract page 5, line 6 - line 15 page 9, line 7 -page 11, line 28; claims 1-11	4,5,7,8
P,A L	the whole document the same applicant	1,13-20
P,Y	US 5 987 525 A (GREENBERG ANN E ET AL) 16 November 1999 (1999-11-16) the whole document	5,7,8,10
P,A		1-4,6,9, 13-18,20
A	US 5 751 672 A (YANKOWSKI CARL J) 12 May 1998 (1998-05-12) the whole document	1-20
P,A	WO 99 63525 A (KONINKL PHILIPS ELECTRONICS NV ;PHILIPS SVENSKA AB (SE)) 9 December 1999 (1999-12-09) the whole document	1-3, 5-10, 13-20

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/30725

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0910088 A	21-04-1999	JP 11177937 A	02-07-1999
EP 0450841 A	09-10-1991	US 5054064 A	01-10-1991
		US 5046092 A	03-09-1991
		US 5046090 A	03-09-1991
		US 4991208 A	05-02-1991
		CA 2039123 A	30-09-1991
		DE 69121444 D	26-09-1996
		DE 69121444 T	13-03-1997
		JP 4223787 A	13-08-1992
WO 9825269 A	11-06-1998	US 6034925 A	07-03-2000
		US 6031795 A	29-02-2000
		AU 7627398 A	29-06-1998
		CN 1239573 A	22-12-1999
		EP 0941537 A	15-09-1999
WO 0005715 A	03-02-2000	AU 4856599 A	14-02-2000
US 5987525 A	16-11-1999	AU 7124698 A	11-11-1998
		EP 1010098 A	21-06-2000
		US 6154773 A	28-11-2000
		WO 9847080 A	22-10-1998
		US 6061680 A	09-05-2000
		US 6161132 A	12-12-2000
US 5751672 A	12-05-1998	AT 192879 T	15-05-2000
		AU 700004 B	17-12-1998
		AU 6344896 A	26-02-1997
		CA 2227519 A	13-02-1997
		CN 1192285 A	02-09-1998
		DE 69608281 D	15-06-2000
		DE 69608281 T	30-11-2000
		EP 0840927 A	13-05-1998
		HK 1007910 A	30-04-1999
		JP 11514482 T	07-12-1999
		WO 9705616 A	13-02-1997
		US 6147940 A	14-11-2000
		US 6128255 A	03-10-2000
		US 6128625 A	03-10-2000
WO 9963525 A	09-12-1999	NONE	

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**